



## User Guide

# Non-Sterile 25 mm Millex® Syringe Filter

Millex®-FG, FH, HV, LCR, LS

For laboratory use only



## Introduction

This document provides chemical compatibility information, operating steps, and specifications for the 25 millimeter (mm) Millex® syringe filter with male Luer-slip outlet. This syringe filter is non-sterile, single-use, and disposable.

The Millex® syringe filter consists of a membrane sealed in a high density polyethylene housing. For details on the type of membrane in your Millex® syringe filter, see the "Specifications" section. The 25 mm syringe filter is recommended for filtering 10–100 milliliter (mL) volumes to remove particles prior to instrumentation analysis.

Syringe filter	Membrane	Application
FG	0.20 µm PTFE	Remove fine particles from organic solutions. Also used for venting applications.
FH	0.45 µm PTFE	Clarify organic solutions.
HV	0.45 µm PVDF	Clarify protein-containing solutions, as well as aqueous or mild organic solutions.
LCR	0.45 µm PTFE	Clarify protein-containing solutions, as well as aqueous or organic solutions.
LS	5.0 µm PTFE	Remove particles from organic solvents.

## Chemical Compatibility

The 25 mm Millex® syringe filter with male Luer-slip outlet is compatible with aqueous, mild organic, and organic solutions. You can use it to filter the agents listed in the following table. This information was developed from technical publications, materials suppliers, and laboratory tests, and is believed to be accurate and reliable. However, because of variability in temperature, concentrations, exposure time, and other factors outside of our control that may affect the use of the unit, Merck Millipore Ltd, does not provide or imply a warranty with respect to such information. Agents not listed below should be tested with the Millex 25 mm syringe filter prior to use.

Chemical			
Acetic acid, glacial	Dimethyl sulfoxide <sup>1</sup>	Hydrogen peroxide (3%)	Phenol (10%)
Acetone <sup>1</sup>	Ethers	Isobutyl alcohol	Pyridine <sup>1</sup>
Amyl acetate	Ethyl acetate	Isopropyl acetate	Silicone oils
Amyl alcohol	Ethylene glycol	Kerosene	Sulfuric acid (3 N)
Benzene	Formaldehyde	Methyl ethyl ketone	Trifluoroacetic acid
Benzyl alcohol	Freon® (TF or PCA)	Methyl isobutyl ketone	Tetrahydrofuran
Boric acid	solvent	Mineral spirits	Toluene
Brine (sea water)	Gasoline	Nitrobenzene	Trichloroethane
Butyl alcohol	Glycerine (Glycerol)	Nitrogen	Trichloroethylene
Carbon tetrachloride	Helium	Ozone (10 ppm in water)	Xylene
Cellosolve® (Ethyl)	Hydrochloric acid	Paraldehyde	
solvent	Hydrofluoric acid	Perchloroethylene	
Cyclohexane	Hydrogen	Petroleum based oils	

<sup>1</sup> Not compatible with HV

## Chemical Compatibility, continued

You can use 25 mm Millex® syringe filters to filter the agents listed in the following table for low extractable HPLC instrumentation analysis applications.

**NOTE:** Merck Millipore Ltd. recommends that you discard the first 1 mL or rinse with 1 to 2 mL of primary solvent before sample filtration.

Acetonitrile	Dimethylformamide <sup>2</sup>	Hexane	Methylene chloride
Chloroform	Dioxane	Isopropyl alcohol	Pentane
Dimethylacetamide <sup>2</sup>	Ethyl alcohol	Methyl alcohol	Petroleum ether

<sup>2</sup> Not compatible with HV

## How to Use 25 mm Millex® Syringe Filters

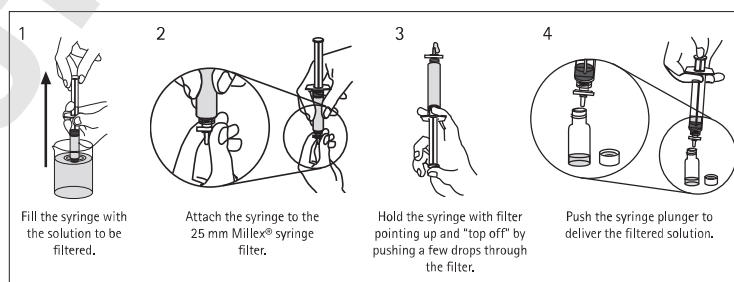
### WARNINGS:

- Do not use the 25 mm Millex® syringe filter for direct patient care applications; it is designed for laboratory use only.
- Do not use with syringes smaller than 10 mL because pressures in excess of the maximum pressure rating may be reached, potentially causing damage to the syringe filter and/or personal injury.

### CAUTIONS:

- Do not use the 25 mm syringe filter at temperatures above 45 °C (113 °F).
- Do not use the 25 mm syringe filter to filter a protein-containing solution unless binding of the sample to the filter has been evaluated.
- Do not reuse the 25 mm syringe filter.

### Instructions for Use



## Specifications

Housing	High density polyethylene
Membrane	
FG, FH, LS	Hydrophobic Fluoropore™ polytetrafluoroethylene (PTFE)
HV	Hydrophilic Durapore® polyvinylidene fluoride (PVDF)
LCR	Hydrophilic PTFE
Dimensions	
Inlet to outlet	19.8 mm (0.8 in.)
Diameter	30 mm (1.2 in.)
Filtration surface area	3.9 cm <sup>2</sup> (0.6 in <sup>2</sup> )
Pore size	
FG	0.20 µm
FH, HV, LCR	0.45 µm
LS	5.0 µm
Temperature limit	45 °C (113 °F) maximum
Pressure limit at 25 °C	7 bar (100 psi) differential
Filtration volume	≤ 100 mL
Hold-up volume	≤ 0.1 mL after air purge at pressure that exceeds bubble point of the membrane

## Specifications, continued

### Typical average flow rate at 20 °C and 10 psi

FG	100 mL/min (methanol)
FH	275 mL/min (methanol)
HV	170 mL/min (water)
LCR	70 mL/min (water)
LS	220 mL/min (water)

Connections Female Luer-Lok™ inlet, male Luer-slip outlet

## HPLC Certification

Millex®-LCR syringe filters are tested for UV-absorbing extractables. HPLC analysis of 1 mL samples of both acetonitrile and water collected after discarding the first 1 mL of solvent showed no peaks greater in intensity than 0.004 AUFS (after the column frontal volume) at either 214 nm or 254 nm.

## Product Ordering Information

Millex® Syringe filter	50/pk	250/pk	1000/pk
FG	SLFG025NS	SLFG025NB	SLFG025NK
FH	SLFH025NS	SLFH025NB	SLFH025NK
HV	SLHV025NS	SLHV025NB	SLHV025NK
LCR	SLCR025NS	SLCR025NB	SLCR025NK
LS	SLLS025NS		

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